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(54) Title: **POLYAMINE/ALKALI SALT BLENDS FOR CARBON DIOXIDE REMOVAL FROM GAS STREAMS**

(57) Abstract: Novel solvents and methods of use for the removal of CO<sub>2</sub> from flue gas, natural gas, hydrogen gas, synthesis gas, and other process and waste gas streams are provided. The solvent contains an alkali salt such as potassium carbonate and a polyamine such as piperazine (PZ) where the polyamine concentration is at least 1.5 equivalents/Kg H<sub>2</sub>O and the alkali salt concentration is at least 0.5 equivalents/Kg H<sub>2</sub>O. The preferred alkali salt/polyamine ratio is from approximately 1:2 to 2:1, and no additional alcohol is required for solubilizing the PZ. This chemical solvent and method of use provides efficient and effective removal of CO<sub>2</sub> from gaseous streams and other sources.

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